

REMARKS

In accordance with the foregoing, claims 1, 3, 8, 14, and 20 have been amended, and claims 1-3, 5-6, 8, 12, 14, 20-22, and 24-28 are pending and under consideration. No new matter is presented in this Amendment.

REJECTIONS UNDER 35 U.S.C. §112:

Claims 1, 8, 14, and 20 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Examiner asserts that the meaning of the first electrode tab being disposed at substantially the center of the battery unit is unclear.

In order to even more particularly point out the aspects of the present invention, claims 1, 8, 14, and 20 have been amended, so as to recite that the first electrode is disposed at substantially the center of the battery unit, on an innermost layer of the battery unit. Accordingly, the meaning of the center of the battery unit has been clarified. Support for this amendment can be found in present FIG. 7 and the related disclosure.

Therefore, this rejection has been respectfully traversed. Reconsideration and withdrawal are respectfully requested.

REJECTIONS UNDER 35 U.S.C. §103:

Claims 1-3, 8, 14, 20, and 24-26 are rejected under 35 U.S.C. §103(a), as being unpatentable over Narukawa et al. (U.S. Patent No. 5,834,133). In particular, the Examiner asserts that Narukawa discloses a battery having a first electrode tab 401 that is disposed at the center of the battery, because Narukawa teaches that the tab 401 is formed on the side of a rolling starting end of the electrode assembly (Example 4, FIG. 11).

In order to even more particularly point out the aspects of the present invention, claims 1, 8, 14, and 20 have been amended, so as to recite that the first electrode is disposed at substantially the center of the battery unit, on an innermost layer of the battery unit. For the following reasons, Narukawa fails to teach such a battery unit.

Narukawa teaches that the battery A4 (Example 4, FIG. 11) was fabricated in substantially the same manner as the battery A2 (Example 2, FIGS. 4-6), except that the incised portion has a different configuration, namely one edge of the incised portion was angled to

facilitate rolling of the electrode assembly (col. 14, lines 34-59). In addition, Narukawa teaches that the battery A2 includes an electrode tab 221 formed by folding an incised portion 222 of a completely uncoated rolling terminal end of a positive electrode plate 220 (col. 9, lines 47-58). The rolling starting end of the plate 220 is shown in FIG. 4 to be coated on both sides.

Narukawa also teaches that the battery A2 included a second electrode tab 231 that was spot welded to an uncoated side of a rolling starting portion of a negative electrode plate 234. Therefore, as shown in FIG. 6, the tab 231 is disposed at the center of the electrode assembly.

Referring back to the battery A4, as shown in FIG. 11, the positive electrode tab 401, which corresponds to the tab 221 of the battery A2, is shown to be disposed on the outer surface of the electrode assembly. The tab 401 is also taught to be formed by formed by folding an incised portion 402 defined by the incision lines 403, 404 and 405, to the side of a sealing plate 241, along a folding line of the non-incision line 406. Therefore, the tab is clearly not located at an innermost layer of the electrode assembly, as it is instead, located on the outermost layer thereof.

However, contrary to the above evidence, the Examiner asserts that Narukawa actually teaches that the tab 401 is disposed at the center of the electrode assembly, i.e. at an innermost layer of the electrode assembly, because Narukawa recites "an incised portion 402 formed in the positive-current collector-exposed portion is defined by an incision line 403 located on the side of the rolling-starting end of the electrode roll,

However, it is Applicants position that the Examiner's interpretation is in error and likely results from the confusing phraseology of Narukawa. In particular, in describing FIG. 11, "the positive-current collector-exposed portion," is taught to be the same exposed portion described for the battery A2. Since, as recited above, this exposed portion is taught to be disposed on the outer surface of the electrode assembly, the incised portion 402 and tab 410 cannot be located at the center of the electrode assembly, i.e., at the innermost layer of the electrode assembly.

Therefore, as would be apparent to one of skill in the art, the recited "side of the rolling-starting end of the electrode roll" actually refers to a side of the exposed portion that faces the rolling starting portion. To support this conclusion, Applicants note that similar terminology is used in col. 9, lines 52-56, where it is recited that a "50 mm-long portion of the positive-current collector extending from an end of the two-side current collector-exposed portion to the side of a rolling-starting end is formed with a positive-electrode active material layer only on one side

thereof....” However, the 50 mm-long portion is clearly shown in FIG. 4 to extend from the completely uncoated rolling terminal portion, which is disposed at the outer surface of the electrode assembly, as recited above.

Furthermore, as shown in FIGS. 5 and 6, since the rolling starting portion of the positive electrode plate 220 is completely coated and disposed at the center of the electrode assembly, the coating would prevent the formation of an incised portion, and thereby prevent the formation of an electrode tab there from. This is especially apparent, given that the negative electrode tab 231 is taught to be spot welded to the uncoated side of the rolling starting portion of the negative electrode plate 234.

In addition, claims 1, 8, 14, and 20 have been further amended to recite that the cut portion is defined by a portion of a lower edge of the first electrode current collector, a portion of a side edge of the current collector that extends from the lower edge, a cut that begins at the lower edge and extends along more than half of the width of the first electrode current collector, and a fold extending between the side edge and the cut. Support for this amendment can be found in present FIGS. 5 and 6B, and the related disclosure.

Narukawa teaches that the incised portion 402, which forms the positive electrode tab 410, is defined by incision lines 403, 404, and 405, and a folding line of the non-incision line 406 (col. 14, lines 41-47). Therefore, Narukawa fails to teach or disclose that the incised portion is defined by portions of a lower edge and side edge of a current collector, as recited in the presently amended claims.

Accordingly, Narukawa not only fails to teach the presently recited first electrode tab, Narukawa also fails to teach such an electrode tab being disposed on an innermost layer of a battery unit. Therefore, this rejection has been respectfully traversed. Reconsideration and withdrawal are respectfully requested.

Claims 5, 6, 12, 21, 22, 27, and 28 are rejected under 35 U.S.C. §103(a), as being unpatentable over Narukawa et al. (U.S. Patent No. 5,834,133, (Narukawa '133)), further in view of Narukawa et al. (U.S. Patent No. 5,508,122, (Narukawa '122)). In particular, the Examiner asserts that Narukawa '122 remedies the deficits of Narukawa '133, by teaching the use of electrode tapes.

For at least the reasons recited above, this combination fails to remedy the deficits of Narukawa '133. Therefore, this rejection has been respectfully traversed. Reconsideration and withdrawal are respectfully requested.

CONCLUSION:

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 503333.

Respectfully submitted,

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